

In the Claims:

Please amend Claims 1, 2, 7-9, 11, 15-18, 20-23, 25-32, 34-38 and 51, cancel Claims 39-50, and add new Claims 60-69, all as shown below. Applicants respectfully reserve the right to prosecute any originally presented or canceled claims in a continuing or future application. This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for governing the delivery rate of electronic mail (email) messages, said method comprising:

identifying one or more email messages to be delivered to a plurality of recipients;

providing maintaining a plurality of mail transfer agents (MTAs) that are capable of delivering the email messages simultaneously;

initiating delivery of the email messages to the plurality of recipients by allocating the email messages among the plurality of MTAs;

monitoring delivery efficiency of said email messages based on the performance of the plurality of MTAs during delivery of the email messages;

determining a target delivery rate for said email messages; and

controlling the rate of the email delivery based on the delivery efficiency and a the target delivery rate of said MTAs by increasing a number of MTAs that are allocated for delivering the email messages when the delivery efficiency of the email messages is below the target delivery rate and decreasing the number of MTAs that are allocated for delivering the email messages when the delivery efficiency is above the target delivery rate.; and

wherein the delivery efficiency is based on the performance of the plurality of MTAs.

2. (Currently Amended) The method of claim 1 wherein:

the delivery efficiency includes a message delivery rate of the email messages that each MTA delivers over a period of time.

the controlling is accomplished by increasing or decreasing the number of MTAs in the plurality of MTAs that can be allocated for delivering email.

3. (Original) The method of claim 1 wherein:

the controlling is accomplished by de-allocating MTAs in the plurality of MTAs that are in use.

4. (Original) The method of claim 1, further comprising:

controlling the rate of delivery based on MTA utilization.

5. (Original) The method of claim 1 wherein:

the delivery efficiency is based on email message throughput over a period of time and the average number of allocated MTAs in the plurality of MTAs over the period of time.

6. (Original) The method of claim 1 wherein:

the controlling is continuous or periodic.

7. (Currently Amended) The method of claim 1 wherein:

the plurality of MTAs ~~can~~ execute on one or more servers.

8. (Currently Amended) The method of claim 1 wherein:

an MTA ~~can be~~ is restarted if it fails.

9. (Currently Amended) The method of claim 1 wherein:

an MTA ~~can personalize~~ personalizes an email message.

10. (Original) The method of claim 1, further comprising:

adjusting an MTA email message delivery retry limit based on one of: 1) a number of allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.

11. (Currently Amended) A method for governing the delivery rate of electronic mail (email) messages, said method comprising:

identifying one or more email messages to be delivered to a plurality of recipients;
providing maintaining a plurality of mail transfer agents (MTAs) that are capable of
delivering the email messages simultaneously;
initiating delivery of the email messages to the plurality of recipients by allocating the
email messages among the plurality of MTAs;
continuously tracking over time delivery efficiency for the plurality of MTAs during
delivery of the email messages;
determining a target delivery rate for said email messages; and
controlling periodically adjusting the rate of the email delivery based on the delivery
efficiency and a the target delivery rate of said MTAs by increasing a number of MTAs that are
allocated for delivering the email messages when the delivery efficiency of the email messages is
below the target delivery rate and decreasing the number of MTAs that are allocated for
delivering the email messages when the delivery efficiency is above the target delivery rate.; and
~~wherein the controlling is accomplished by increasing or decreasing the number of MTAs~~
~~in the plurality of MTAs that can be allocated for delivering email.~~

12. (Original) The method of claim 11 wherein:

the controlling is accomplished by de-allocating MTAs in the plurality of MTAs that are in use.

13. (Original) The method of claim 11, further comprising:

controlling the rate of delivery based on MTA utilization.

14. (Original) The method of claim 11 wherein:

the delivery efficiency is based on email message throughput over a period of time and the average number of allocated MTAs in the plurality of MTAs over the period of time.

15. (Currently Amended) The method of claim 11 wherein:

the delivery rate is periodically adjusted based on a time interval determined by a
governing parameter.

~~the controlling is continuous or periodic.~~

16. (Currently Amended) The method of claim 11 wherein:
the plurality of MTAs ~~can~~ execute on one or more servers.

17. (Currently Amended) The method of claim 11 wherein:
an MTA ~~can be~~ is restarted if it fails.

18. (Currently Amended) The method of claim 11 wherein:
an MTA ~~can personalize~~ personalizes an email message.

19. (Original) The method of claim 11, further comprising:
adjusting an MTA email message delivery retry limit based on one of: 1) a number of allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.

20. (Currently Amended) A system for governing the delivery rate of electronic mail (email) messages, said system comprising:

a plurality of mail transfer agents (MTAs) ~~operable to deliver~~ that deliver email messages, said email messages being allocated among the plurality of MTAs; and

a governor ~~operable to control~~ that monitors delivery efficiency of the email messages based on the performance of the MTAs, determines a target delivery rate for said email messages and controls the delivery rate of the plurality of MTAs based on delivery efficiency and at the target delivery rate by increasing a number of MTAs that are allocated for delivering the email messages when the delivery efficiency of the email messages is below the target delivery rate and decreasing the number of MTAs that are allocated for delivering the email messages when the delivery efficiency is above the target delivery rate.

21. (Currently Amended) The system of claim 20 wherein:
the delivery efficiency includes a message delivery rate of the email messages that each MTA delivers over a period of time.

~~the governor is operable to increase or decrease the number of MTAs in the plurality of MTAs that can be allocated for delivering email.~~

22. (Currently Amended) The system of claim 20 wherein:

~~the governor is operable to de-allocate de-allocates MTAs in the plurality of MTAs that are in use.~~

23. (Currently Amended) The system of claim 20 wherein:

~~the governor is operable to control controls the rate of delivery based on MTA utilization.~~

24. (Original) The system of claim 20 wherein:

~~the delivery efficiency is based on email message throughput over a period of time and the average number of allocated MTAs in the plurality of MTAs over the period of time.~~

25. (Currently Amended) The system of claim 20 wherein:

~~the governor is operable to control controls the delivery rate continuously or periodically.~~

26. (Currently Amended) The system of claim 20 wherein:

~~the plurality of MTAs can execute on one or more servers.~~

27. (Currently Amended) The system of claim 20 wherein:

~~an MTA can be is restarted if it fails.~~

28. (Currently Amended) The system of claim 20 wherein:

~~an MTA can personalize personalizes an email message.~~

29. (Currently Amended) The system of claim 20 wherein:

~~the governor is operable to adjust adjusts an MTA email message delivery retry limit based on one of: 1) a number of allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.~~

30. (Currently Amended) A system for governing the delivery rate of electronic mail (email) messages, said system comprising:

a plurality of mail transfer agents (MTAs) ~~operable to deliver that deliver email messages, said email messages being allocated among the plurality of MTAs~~; and

a governor ~~operable to control that continuously tracks over time a delivery efficiency of the email messages based on the performance of the MTAs, determines a target delivery rate for said email messages and periodically adjusts~~ the delivery rate of the plurality of MTAs based on delivery efficiency and ~~at the target delivery rate by increasing a number of MTAs that are allocated for delivering the email messages when the delivery efficiency of the email messages is below the target delivery rate and decreasing the number of MTAs that are allocated for delivering the email messages when the delivery efficiency is above the target delivery rate.~~

~~wherein the governor is operable to increase or decrease the number of MTAs in the plurality of MTAs that can be allocated for delivering email.~~

31. (Currently Amended) The system of claim 30 wherein:

~~the governor is operable to de-allocate de-allocates~~ MTAs in the plurality of MTAs that are in use.

32. (Currently Amended) The system of claim 30 wherein:

~~the governor is operable to control adjusts~~ the rate of delivery based on MTA utilization.

33. (Original) The system of claim 30 wherein:

the delivery efficiency is based on email message throughput over a period of time and the average number of allocated MTAs in the plurality of MTAs over the period of time.

34. (Currently Amended) The system of claim 30 wherein:

~~the governor periodically adjusts the delivery rate based on a time interval determined by a governing parameter, is operable to control continuously or periodically.~~

35. (Currently Amended) The system of claim 30 wherein:

the plurality of MTAs ~~can~~ execute on one or more servers.

36. (Currently Amended) The system of claim 30 wherein:

an MTA ~~can be~~ is restarted if it fails.

37. (Currently Amended) The system of claim 30 wherein:

an MTA ~~can personalize~~ personalizes an email message.

38. (Currently Amended) The system of claim 30 wherein:

the governor ~~is operable to adjust~~ adjusts an MTA email message delivery retry limit based on one of: 1) a number of allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.

39-50. (Canceled)

51. (Currently Amended) A method for governing the delivery rate of electronic mail (email) messages, said method comprising:

identifying one or more email messages to be delivered to a plurality of recipients;

providing maintaining a plurality of mail transfer agents (MTAs) that are capable of delivering the email messages simultaneously;

initiating delivery of the email messages to the plurality of recipients by allocating the email messages among the plurality of MTAs;

maintaining an email message retry limit;

detecting failure of the delivery to one or more of the plurality of recipients;

repeating delivery attempts based on the email message retry limit; and

automatically adjusting a email message retry limit for the plurality of MTAs to reduce delivery failure rate of said email messages by reducing resources spent on the recipients for which delivery attempts have failed. and

wherein an MTA in the plurality of MTAs can be allocated for delivering email.

52. (Original) The method of claim 51, further comprising:

controlling the rate of the email delivery based on delivery efficiency and a target delivery rate; and

wherein the delivery efficiency is based on the performance of the plurality of MTAs.

53. (Original) The method of claim 51 wherein:

adjusting an MTA email message delivery retry limit is based on one of: 1) a number of allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.

54. (Original) The method of claim 51 wherein:

the retry limit is reduced if a number of allocated MTAs in the plurality of MTAs exceeds a first value.

55. (Original) The method of claim 51 wherein:

the retry limit is increased if the number of allocated MTAs in the plurality of MTAs falls below a second value.

56. (Original) The method of claim 51 wherein:

the retry limit is decreased if an email delivery failure rate exceeds a first value.

57. (Original) The method of claim 51 wherein:

the retry limit is increased if an email delivery failure rate falls below a second value.

58. (Original) The method of claim 51 wherein:

the retry limit decreases as is later stages of message delivery.

59. (Original) The method of claim 51 wherein:

the retry limit is inversely proportionate to utilization of the plurality of MTAs.

60. (New) A computer readable storage medium having instructions stored thereon, which instructions when executed by one or more processors cause a system to:

identify one or more email messages to be delivered to a plurality of recipients;

maintain a plurality of mail transfer agents (MTAs) that are capable of delivering the email messages simultaneously;

initiate delivery of the email messages to the plurality of recipients by allocating the email messages among the plurality of MTAs;

monitor delivery efficiency of said email messages based on the performance of the plurality of MTAs during delivery of the email messages;

determine a target delivery rate for said email messages; and

control the rate of the email delivery based on the delivery efficiency and the target delivery rate of said MTAs by increasing a number of MTAs that are allocated for delivering the email messages when the delivery efficiency of the email messages is below the target delivery rate and decreasing the number of MTAs that are allocated for delivering the email messages when the delivery efficiency is above the target delivery rate.

61. (New) The computer readable storage medium of claim 60 wherein:

the delivery efficiency includes a message delivery rate of the email messages that each MTA delivers over a period of time.

62. (New) The computer readable storage medium of claim 60 wherein:

the controlling is accomplished by de-allocating MTAs in the plurality of MTAs that are in use.

63. (New) The computer readable storage medium of claim 60 wherein:

controlling the rate of delivery is based on MTA utilization.

64. (New) The computer readable storage medium of claim 60 wherein:

the delivery efficiency is based on email message throughput over a period of time and the average number of allocated MTAs in the plurality of MTAs over the period of time.

65. (New) The computer readable storage medium of claim 60 wherein:
the controlling is continuous or periodic.

66. (New) The computer readable storage medium of claim 60 wherein:
the plurality of MTAs execute on one or more servers.

67. (New) The computer readable storage medium of claim 60 wherein:
an MTA is restarted if it fails.

68. (New) The computer readable storage medium of claim 60 wherein:
an MTA personalizes an email message.

69. (New) The computer readable storage medium of claim 60 further comprising
instructions which cause the system to:

adjust an MTA email message delivery retry limit based on one of: 1) a number of
allocated MTAs; 2) delivery failure rate; 3) a number of allocated MTAs and a delivery failure
rate; 4) stage of message delivery; and 5) utilization of the plurality of MTAs.